

Patent
Serial No. 09/852,924
Attorney Docket No. 9G01.1-150

In the Claims:

1-10. (Cancelled)

11. (Previously presented) A method of rendering a screen of a computer display device under conditions requiring frequent repainting of the screen, the display device being a part of a computer system running a graphic visualization application under control of an operating system, the method comprising the steps of:

- a. detecting the onset of conditions requiring frequent repainting of the screen;
- b. obtaining from the operating system information necessary for repainting;
- c. partly repainting the screen by rendering a predetermined number of objects of a scene graph;
- d. checking whether the conditions of step a. still apply; and
- e. repeating steps b. through d. until the conditions of step a. no longer apply,

the steps a., b., and d. being carried out based on messages sent by the operating system to the application's message queue, the screen displaying a graphically complex visualization scene represented in the computer system as the scene graph.

12. (Original) A method according to claim 11, wherein step c. is repeated and more objects are added to the scene if in step d. no navigation-related message is found in the message queue.

13. (Original) A method according to claim 12, wherein the screen is repainted in the order of traversing the scene graph.

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14. (Previously presented) A method according to claim 11, wherein the operating system is MS Windows operating system.
15. (Previously presented) A method according to claim 11, wherein the conditions requiring frequent repainting of the screen are a result of a navigation operation initiated by an application user.
16. (Previously presented) A method according to claim 15, wherein the scene is navigated with an input device.
17. (Previously presented) A method according to claim 16 wherein the input device is a mouse or a keyboard.
18. (Previously presented) A method according to claim 15, wherein the navigation operation is selected from the group consisting of panning, rotating and zooming.
19. (Previously presented) A computer based system for rendering on a screen of a computer display device under conditions requiring frequent repainting of the screen, the computer based system running a graphic visualization application under control of an operating system, the computer based system comprising:
 - a. module for detecting the onset of conditions requiring frequent repainting of the screen;
 - b. module for obtaining from the operating system information necessary for repainting;
 - c. module for partly repainting the screen by rendering a predetermined number of objects of a scene graph;
 - d. module for determining whether the conditions still apply, the obtaining module, the repainting module and the determining module repeatedly operating while the conditions are apply,

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the detecting module, the obtaining module and the determining module being operated based on messages sent by the operating system to the application's message queue, the screen displaying a graphically complex visualization scene represented in the computer based system as a scene graph.

20. (Previously presented) A computer based system according to claim 19, wherein the repainting module includes module for allowing more objects to be added to the scene when no navigation-related message is found in the message queue.

21. (Previously presented) A computer based system according to claim 20, wherein the repainting module ensures that the screen is repainted in the order of traversing the scene graph.

22. (Previously presented) A computer based system according to claim 19, wherein the operating system is MS Windows operating system.

23. (Previously presented) A computer based system 19, wherein the conditions requiring frequent repainting of the screen are operatively coupled to a navigation operation initiated by an application user.

24. (Previously presented) A computer based system according to claim 23, wherein the navigation operation is provided by an input device that accepts inputs from the application user.

25. (Previously presented) A computer based system according to claim 23, wherein the navigation operation is selected from the group of consisting of panning, rotating and zooming.

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26. (Previously presented) A computer storage medium storing computer readable code embodied therein for rendering a screen of a computer display device under conditions requiring frequent repainting of the screen, the display device being a part of a computer system running a graphic visualization application under control of an operating system, comprising:

- a. code for detecting the onset of conditions requiring frequent repainting of the screen;
- b. code for obtaining from the operating system information necessary for repainting;
- c. module for partly repainting the screen by rendering a predetermined number of objects of a scene graph;
- d. code for checking whether conditions of step a. still apply; and
- e. code for repeating the codes b. through d. until the conditions of the code a. no longer apply,

the codes a., b., and d. being carried out based on messages sent by the operating system to the application's message queue, the screen displaying a graphically complex visualization scene represented in the computer system as the scene graph.

27. (Previously presented) A computer storage medium according to claim 26, wherein the code c includes code for allowing more objects to be added to the scene when no navigation-related message is found in the message queue.

28. (Previously presented) A computer storage medium according to claim 26, wherein the code c includes code for partly repainting the screen in the order of traversing the scene graph.

29. (Previously presented) A computer based system according to claim 26, wherein the code c detects the onset of a result of a navigation operation initiated by an application user.